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Autism spectrum disorder: perspectives from paediatricians

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ABSTRACT

Aims: Since the first medical contact of children and families is mostly with paediatricians, the knowledge and experience of paediatricians on Autism Spectrum Disorder (ASD) is extremely significant. It was aimed to investigate paediatricians' general knowledge on ASD, daily practices in the outpatient clinic and ability to recognize warning signs.

Methods: A 40-item questionnaire prepared by the researchers was completed with 116 specialists or subspecialties working in public and private hospitals of two cities in Türkiye.

Results: While 41.7% of paediatricians received rotation training in residency, 32.8 % reported they have enough experience. While 87% considered ASD screening among their duties, only 12.8% stated they have enough time. The number of patients referred for formal assessment of ASD was low. Gender, type of expertise, duration of experience, and sense of competence were not associated with referral frequency. It's been determined paediatricians have a lack of knowledge about ASD. While not responding to name and difficulty following the instructions were seen as most warning symptoms, other diagnostic criteria and accompanying symptoms were recognized insufficiently.

Conclusions: In addition to increasing the duration and quality of child psychiatry education during residency, regulating the outpatient clinic conditions can overcome an important obstacle in the early diagnosis of ASD.

Keywords: Paediatricians, awareness, autistic disorder, early diagnosis, knowledge

INTRODUCTION

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that first appears in early childhood and is characterized by repetitive behaviours, limited interests and a persistent impairment in social and communication skills. The clinical presentation and severity of symptoms vary between individuals.[1] According to the Centres for Disease Control and Prevention (CDC), the prevalence of ASD was reported to be 1/150, 1/59, and 1/36 in 2000, 2014, and 2020, respectively, in the United States, and there has been a striking increase in the incidence of ASD.[2]

The American Academy of Paediatrics (AAP) advises developmental monitoring at every appointment, formal developmental screening at 9, 18, and 30 months, and autism-specific screening at 18 and 24 months for all typically developing children in order to diagnose ASD early.[3] Similarly, the Public Health Institution of Türkiye recommends that children aged 18-36 months be evaluated for ASD at least once.[4] The most emphasized topic in the literature regarding the prognosis of the disorder is the early diagnosis and the initiation of appropriate educational approaches without delay. Early intervention has been found to result in significant gains in social communication skills such as joint attention, pretend play, imitation, and language use, while reducing stereotypical behaviors.[5,6] In our country, Child Psychiatrists are responsible for the diagnosis and treatment planning of ASD. Families can directly approach these departments for consultations. However, in our country, children's first contact with the health system is usually with their paediatricians or family physicians. Therefore, the knowledge, experience and skills of paediatricians related to ASD are critically important for early diagnosis and intervention.

In studies conducted in different countries, it has been determined that paediatricians do not have enough information about the clinical appearance, etiology, diagnosis and treatment processes of ASD.[7-9] Similar results were obtained in studies conducted in our country.[10-12] In parallel with the theoretical inadequacy regarding the etiology, symptoms, clinical course, and treatment of ASD, problems are also observed in the screening of ASD and its referral to higher units in clinical practice. While it was found that patients screened for ASD were not adequately

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referred to higher units,[13,14] a retrospective study conducted with children diagnosed with ASD in our country found that very few children were referred to child psychiatry despite their previous paediatric clinic applications.[15]

In this study, it was aimed to evaluate paediatricians as follows:

1. Sociodemographic characteristics (gender, title, medical experience, parenting experience)
2. Background related to ASD (trainings received during assistantship and post-expertise, presence of ASD in the family, subjective sense of competence),
3. Clinical practices (routine screening for ASD, referral frequency, referral age range, examination times),
4. Knowledge and beliefs about the clinical appearance, etiology and treatment of ASD,
5. Knowledge about the warning signs for ASD in different age ranges (0-2 years, 2-6 years).

In the literature, there are studies that examine paediatricians' experience, past training, and knowledge levels related to ASD. It is believed that evaluating paediatricians' clinical practices and their knowledge about warning signs for ASD, in addition to these parameters, would contribute to the literature.

METHODS

The study was carried out with the permission of the University of Health Sciences Antalya Training and Research Hospital Clinical Researches Ethics Committee (Date: 12.09.2019, Decision No: 20/16). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. All participants were informed verbally or in writing about the purpose and confidentiality of the survey.

This is an observational, descriptive, cross-sectional study. It was conducted between September 2021 and June 2022 in Antalya and Mersin city centers where the authors work as child and adolescent psychiatrists. These two city centres have a population of approximately 1.7 million in total. We aimed to study with paediatric specialists (general paediatricians-paediatric subspecialists) who provide outpatient clinic services in either public or private hospitals. Therefore, paediatric residents and academic faculty members who assessed patients as part of residency training at the university were excluded from the study.

All subspecialists included in the study work in general hospitals similar to specialists (general paediatricians) and provide regular polyclinic service every day. Subspecialists such as neonatal, intensive care, and emergency departments were not included in the study because they did not perform regular outpatient clinics.

Attempts were made to reach all 178 paediatricians who met the criteria, and out of 143 physicians reached, 116 agreed to participate and were included in the study.

A questionnaire consisting of 40 questions created by the researchers was used in the study. The survey questions were arranged in five sections. The section evaluating the socio-demographic characteristics of the participants, their background related to ASD, and their knowledge and beliefs about the clinical appearance, etiology and treatment of ASD was created according to previous studies.[10,12,16] Clinical practice and referral approaches and symptoms seen as stimulant in the clinic, were created based on the outputs of studies related to the field and the main problems we observed in our own outpatient practice. The questionnaire was prepared in the native language of the authors and participants (Turkish).

In the warning signs for physicians, only autism diagnostic criteria were not used and aside from these, clinical conditions frequently seen with ASD were also included. Since they were considered to be restrictive, the questions in this area were not asked as yes-no, but rather graded (not stimulant-mildly stimulant-highly stimulant). Since a scale was not used in our research, the answers given to the questions were not evaluated comparatively, each question was evaluated within itself. Our questionnaire was applied by face-to-face in order to prevent the use of auxiliary information sources, which has been encountered in similar studies. The main purpose of this application was to determine the current situation of the participants regarding ASD more accurately and objectively. Questions that were not understood by the participants during the application were explained when deemed necessary.

Statistical analyses were performed using the SPSS Statistics for Windows, version 26.0. The Kolmogorov-Smirnov test was used to determine whether the variables were normally distributed. Descriptive variables were given as number (N) and percentage (%). The Mann-Whitney U and Kruskal-Wallis tests were used for comparisons between groups. The Pearson Chi-square test or Fisher's Exact test was used to compare categorical variables. A p value less than 0.05 was considered to indicate a statistically significant difference.

RESULTS

A total of 116 paediatricians participated in the study. 53.4% of the participants were male and 46.6% were female. While the rate of specialists (generalists) was 60.9%, the rate of subspecialists was 39.1%. While 30.7% of specialists had less than five years of experience, 52.6% had 10 years or more of experience. These rates were 55.6% and 17.6% for subspecialists. 66.4% of the participants had parenting experience. 66.4% of the participants had parenting

experience. The percentage of those with one child was 29.3%, those with two children was 28.4%, and those with three or more children was 8.6%.

Paediatricians' experiences related to ASD, their past training, and their perceptions of competence in the field are summarized in **Table 1a** and **1b**. 32.8% of the participants self-reported that they had sufficient experience in the field. This subjective sense of competence was not associated with rotation training and post-specialty training.

Table 1a. Physicians' autism-related experience and past training

	Yes (n,%)	No (n,%)
Has anyone in your family been diagnosed with autism?	26 (22.4%)	90 (77.6%)
I received training on autism during my assistantship	48 (41.7%)	67 (58.3%)
I received training on autism after my assistantship	9 (8.3%)	103 (91.7%)
I have sufficient experience in autism.	38 (32.8%)	78 (67.2%)
Child psychiatry rotation should be in the paediatric residency period.	110 (94.8%)	6 (5.2%)

Table 1b. Physicians' autism-related experience and past training

When was the last time you read an article on autism? (n,%)	**In the last year**	**In the last 5 years**	**In the last 10 years**	**Not read**	
	33 (28.4%)	38 (32.8%)	12 (10.3%)	33 (28.4%)	
How long should the rotation period be? (n,%)	**1 month**	**2 months**	**3 months**	**4 months**	**+6 months**
	11 (9.9%)	31 (27.9%)	51 (45.9%)	13 (11.7%)	5 (4.5%)

Table 2 summarizes physicians' clinical approaches to ASD.

Table 2. Physicians' clinical approaches to autism

How often do you refer patients with suspicion of autism? (n,%)	
None	11 (9.7%)
1-2 per day	4 (3.5%)
1-2 per week	22 (19.5%)
1-2 per month	34 (30.1%)
1-2 per year	42 (37.2%)
In which age range do you refer patients with the suspicion of autism?[a,d,e] (n,%)	
0-1 age	0 (0%)
1-2 age	12 (10.5%)
2-3 age	61 (53.5%)
+3 age	41 (36%)
At what age range do you refer children with speech delay for psychiatric evaluation? (n,%)	
1-2 age	19 (16.4%)
2-3 age	49 (42.2%)
+3 age	48 (41.4%)
Do you routinely ask questions about developmental stages in the 0-2 age group?[e] (n,%)	
No	19 (16.4%)
Sometimes	34 (29.3%)
Yes	63 (54.3%)

a: p<0,05 between those children and those without children
b: p<0,05 between experience +10 years and <10 years
c: p<0,05 between specialist and sub-specialists
d: p<0,05 between male and female
e: p<0,05 between those feeling competent vs non- competent

87% of paediatricians believed that there was an increase in the prevalence of ASD. Similarly, the same percentage of physicians considered screening of ASD among their duties, but only 12.8% reported that they have enough time for it. The rate of screening developmental stages in the 0-2 age group was 54.3%, and this rate was significantly higher among those who self-reported having sufficient experience ($p<0.05$).

Table 3 demonstrates physicians' information on the clinical appearance, causes and treatment of ASD.

Table 3. Physicians' knowledge on the clinical appearance, causes and treatment of autism

	Yes (n,%)	No (n,%)
Mental retardation may be co-diagnosed with autism	65 (56.0%)	51 (44.0%)
Autism is a neurodevelopmental disorder	99 (85.3%)	17 (14.7%)
Autism is an autoimmune disorder	24 (21.1%)	90 (78.9%)
Hyperactivity is one of the main symptoms in autism.	67 (59.3%)	46 (40.7%)
Symptoms in autism begin after 3 years of age	12 (10.3%)	104 (89.7%)
The intelligence level of autism cases is normal and above normal.	55 (48.2%)	59 (51.8%)
Excessive TV, telephone and information exposure are causes of autism.	80 (69.6%)	35 (30.4%)
Serious life events such as divorce, accident, loss of a family member are among the causes of autism.	42 (36.8%)	72 (63.2%)
Lack of interest in the family is one of the causes of autism.[c]	70 (61.4%)	44 (38.6%)
Parents' wrong attitudes are among the causes of autism.[c]	63 (55.3%)	51 (44.7%)
Heavy metals are among the causes of autism.	79 (69.3%)	35 (30.7%)
Vaccines are one of the causes of autism.	11 (9.6%)	103 (90.4%)
Autism is a treatable disorder.	75 (67.0%)	37 (33.0%)
Diet is effective in the treatment of autism.[b]	64 (56.6%)	49 (43.4%)
Vitamin-mineral supplements are effective in the treatment of autism.[b]	50 (43.9%)	64 (56.1%)
Hyperbaric oxygen therapy is effective in the treatment of autism.	18 (16.2%)	93 (83.8%)
	n (%)	
Primary treatment in autism	0 (0%)	
Pharmacotherapy	2 (1.7%)	
Diet	0 (0%)	
Special education	79 (68.7%)	
Family interest	34 (29.6%)	

a: p<0,05 between those children and those without children
b: p<0,05 between experience +10 years and <10 years
c: p<0,05 between specialist and sub-specialists
d: p<0,05 between male and female
e: p<0,05 between those feeling competent vs non- competent

Symptoms considered highly stimulating by paediatricians are presented in **Figures 1** and **2**. The rates of symptoms not considered as stimulating in the 0-2 age group are as follows: Breast refusal (64.9%), gastrointestinal system problems (60.2%), absence of

separation anxiety (53.1%), sniffing objects (37.5%). The rates of symptoms not considered as stimulating in the 2-6 age group are as follows: hyperlexia (63.2%), smelling objects (38.6%), excessive playing with water (35.1%), delaying in toilet training (33.9%), inability to learn colours (28.7%) and indifference to pain and heat (27%).

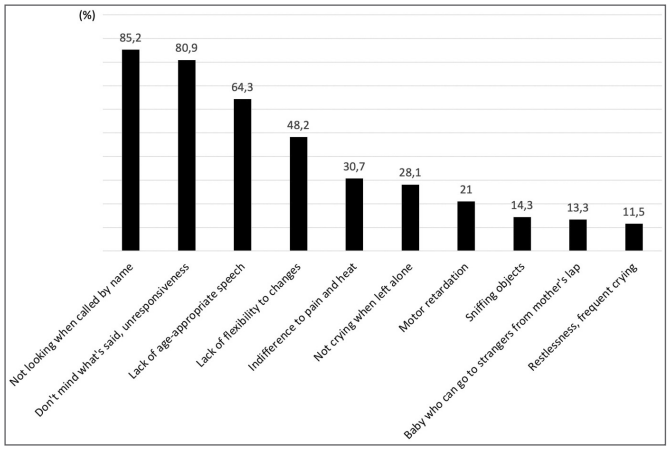

Figure 1. Symptoms highly stimulating for age 0-2

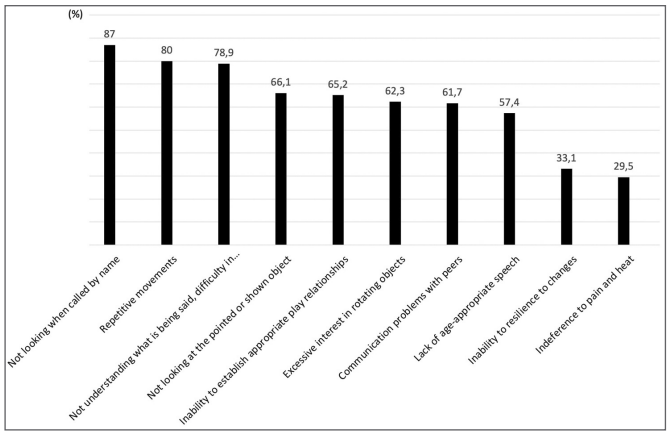

Figure 2. Symptoms highly stimulating for age 2-6

It is shown in **Tables 2**, **3** whether the level of experience (10- years /10+ years), gender, having a child, type of specialization (specialist / subspecialist) and the sense of competence have a significant effect on the knowledge levels and clinical approaches of physicians.

DISCUSSION

This study revealed that paediatricians do not have sufficient knowledge about the causes, clinical symptoms and treatment of ASD, as well as serious deficiencies in routine screening in outpatient clinics, identifying risky children and referring them to the Child Psychiatry Clinic.

Autism Related Experience and Past-Training

Approximately two-thirds of the participants (67.2%) self-reported that they did not have enough experience with ASD. This result is consistent with the results of Austriaco et al.[16] and Citil et al.[10] which shown that paediatricians experience discomfort in the field. Although these data suggest that paediatricians have more experience in the field, the sense of competence is limited as it is evaluated subjectively and can be reconsidered in studies where competence is evaluated objectively.

41.7% of the participants received a one-month rotation training during the residency. It was determined that receiving rotation training didn't increase the sense of subjective competence and didn't cause significant changes in general knowledge and clinical approaches. Although this information is consistent with the results of Citil et al.[10] Song et al.[8] found that rotation training significantly increased the general knowledge about ASD. It has been shown that an interactive video and practice-based training program for paediatric resident increases ASD-related competence.[17] The results of our study may be related to insufficient rotation training, as well as the loss of long-term gains. The low rate of receiving post-specialization education (8.8%) and the relative inadequacy of personal efforts, such as following up-to-date literature, seem to support this information. In a study conducted in our country, it has been reported that healthcare professionals who participated in training related to ASD shown an improvement in their knowledge levels.[18] While almost all participants (94.8%) agreed on the necessity of Child Psychiatry rotation, 90.1% found the current one-month duration insufficient. Based on this information, it is recommended to review the duration and content of paediatricians rotation training during the residency, and develop strategies for continuing educational efforts in the post-specialty period.

Clinical Approach

Although ASD symptoms appear in the first two years,[19] the mean age at diagnosis still seems high in the world and in our country. In a retrospective examination of diagnosed children conducted by Erden et al.[15] it was revealed that only 4% of the patients seen by paediatricians were referred. In studies conducted around the world, it is mentioned that there are serious problems with the referral of patients, for various reasons, even when standardized tools like M-CHAT are used to identify at-risk individuals.[13,14]

The fact that 87% of the participants considered ASD screening as part of their duties indicates a high level of awareness in the field. However, the rate of routine screening of developmental stages in the 0-2 age group remained at 54.3%. It was found that 9.7% of the participants had never referred a patient, 30.1% referred 1-2 patients per month, 37.2% referred 1-2 patients per year. The frequency of referral was not related to factors such as year of residency, title, gender, having children or a sense of competence. Given that participants evaluate

an average of 30-50 paediatric patients per day, it can be concluded that referrals are relatively infrequent. One limiting factor for referrals may be a lack of time, as 87.2% of the participants stated that they did not have enough time in the outpatient clinic for ASD screening. Dosreis et al.[20] and Gabrielsen et al.[21] reported that not having sufficient time was the biggest obstacle to screening patients for ASD. As a matter of fact, in our study, both the general knowledge of the physicians about ASD and their familiarity of clinical signs that can aid in diagnosis were insufficient. However, there are studies showing that even qualified paediatricians who can administer tools like M-CHAT often fail to refer at-risk patients to specialized centers.[13] In these studies, besides the organizational problems with the referral system, factors such as the physician's insecurity, fear of labeling the patient, and lack of communication skills to talk to the family about the issue came to the fore.[22] In the group we studied, these factors might also have presented challenges in terms of patient referrals.

53.5% of the paediatric specialists indicated that they preferred to refer suspected ASD cases between the ages of 2-3, while 36% stated that they preferred to refer them over the age of three. Men and those without children are significantly more likely to refer over the age of three years This pattern might be explained by the idea proposed by Mao et al.[9] which suggests that women and those with parenting experience tend to possess greater knowledge about developmental milestones. Contrary to the ideal timing, delayed referral may be associated with various factors mentioned earlier (lack of time, lack of knowledge and experience, etc.). Alternatively, it could be linked to the wait-and-see strategy, which is still frequently preferred by physicians, although it is not recommended in the field.[23]

A similar delay in referral appears to be applicable to patients presenting with speech delay as well. In our study, 41.4% of the paediatricians stated that they referred patients with speech delays for psychiatric evaluation after the age of three. Considering that individuals with ASD are often brought to the outpatient clinic due to a lack of age-appropriate speech,[24] the high rate of referrals at age three and older can be regarded as a serious issue for early diagnosis. Although the participants stated that ASD symptoms started before the age of three with a high rate (89.7%), the delay in referrals may be due to paediatricians not perceiving speech-related impairments as significant enough. Among physicians, 64.3% for ages 0-2 and 57.4% for ages 2-6 considered speech delay as a strong indicator for ASD. This approach to speech delay aligns with previous studies in our country. According to Erden et al.[15] the families of some of the children with speech delay are given early assurance that there is no problem leading to wasted time, especially for boys, by assuming they will talk over time.

Further studies are needed to investigate the frequency of referral for formal assessment of ASD, the age range of referral, and the factors that hinder referral.

Knowledge and Beliefs About ASD

Relatives of patients experience serious confusion about the causes and treatment of ASD.[25,26] Misleading explanations regarding the causes of autism can lead to increased feelings of guilt among families, while unverified treatment attempts can result in families misallocating their resources. Considering the close contact of paediatricians with families, it is critical for physicians to have accurate knowledge of etiology and treatments, and to effectively communicate this information to families to ensure proper treatment adherence.

In our study, it was determined that were considered the false beliefs in the society about the etiology of ASD were also accepted among paediatricians to a certain extent. Specifically, screen exposure (69.6%), important life events (36.8%), insufficient family involvement (61.4%), inappropriate parental attitudes (55.3%), heavy metals (69.3%), autoimmunity (21.1%), and vaccines (9.6%) were mentioned as potential causes of ASD. General paediatricians cited the insufficient care of the family and inappropriate parental attitudes as significantly more causes than the subspecialties ($p<0.05$). For other parameters, duration of expertise, title, gender, sense of competence or having children were not associated with a significant difference. Insufficient knowledge of paediatricians about etiology reported by Citil et al.[13] is in line with the results of our study.

The most critical of the misconceptions regarding etiology were those related to vaccines. Although the percentage of paediatricians who believe vaccines are the cause of ASD appears low, it is still worrisome. It has been shown that the trust of healthcare professionals in vaccines directly affects their willingness to recommend vaccines to their patients.[27] Associating vaccines with ASD can lead parents to reject vaccines, emphasizing the importance of dispelling such misconceptions among healthcare providers.

Considering the opinions of paediatricians regarding the treatment of ASD, approximately two-thirds of the participants view ASD as treatable. Although the study did not outline the specific curability framework, it is encouraging to see that the majority of physicians consider ASD treatable. This perspective is likely influenced by the progress made in treating ASD in the country. It's noteworthy that 64% of the participants identified special education as the primary treatment, indicating that special education practices are widely accepted

among pediatricians. Furthermore, 29.6% of participants stated that family involvement is the primary treatment, possibly related to their perception of insufficient parental attention as a cause of the condition and attributing it to incorrect parental attitudes. A total of 56.6% of the paediatricians believed that dietary interventions were effective in the treatment, while 43.9% believed in the effectiveness of vitamin-mineral supplementation. It is possible that parents frequently opt for dietary practices to address gastrointestinal system problems, which in turn may have influenced the physicians' perceptions regarding the effectiveness of such interventions in managing ASD symptoms. It was observed that physicians with more than 10 years of expertise considered family support, dietary interventions and vitamin-mineral supplements to be significantly more effective in the treatment than those with less than 10 years of experience. This suggests that physicians with less than 10 years of experience may have more accurate knowledge about treatment options. It's a positive sign that awareness about ASD treatment has increased in recent years.83.8% of the participants self-reported that hyperbaric oxygen therapy was not effective. The high level of awareness on this issue is gratifying.

Warning Signs

In the 0-2 age group, the three symptoms that were seen as highly stimulating at the highest rate were as follows: not responding to the name (85.2%), difficulty in following instructions (80.9%) and not speaking in accordance with their age (64.3%). The fact that ASD diagnostic criteria in the field of social communication and interaction are the most widely recognized symptoms is consistent with the literature.[10] However, inflexibility to changes was reported by 48.2%, insensitivity to pain by 30.7%, and sniffing objects by 14.3% as high stimuli. The lower recognition of symptoms in the restricted, repetitive behaviours domain may indicate a knowledge gap in this area. These findings are consistent with a study indicating low awareness related to sensory dysregulation.[16] This could be because general education tends to focus more on social communication and interaction, possibly neglecting sufficient emphasis on symptoms related to limited and repetitive behaviour.

The highest rate of non-stimulant (non-stimulant) symptoms in the 0-2 age group were breast refusal (64.9%), gastrointestinal system problems (60.2%), and absence of separation anxiety from the mother (53.1%). Although these symptoms are not diagnostic criteria, they often accompany with ASD. Weaning is more frequent in children with ASD than in normally developing children.[28] Again, approximately 70% of these children have eating behaviour problems and 36% of these are serious problems.[29] Abnormal eating habits and problems with GIS may be a manifestation of limited interest and repetitive behaviours of ASD. In addition, despite the knowledge that motor developmental defects can be observed in patients with ASD from an early period,[19,24] 43% of paediatricians did not consider them significant. Although these symptoms may not be directly related to ASD, their dismissal as potential clinical indicators by paediatricians can be viewed as a deficiency.

In the 2-6 age group, the three symptoms that considered highly stimulating at the highest rate were not responding to the name (87.0%), repetitive movements (80.0%) and difficulty in following instructions (78.9%), while the three symptoms that not considered as stimulant (non-stimulant) were hyperlexia (63.2%), sniffing objects (38.6%) and excessive playing with water (35.1%). Not responding to the name and difficulty following instructions are the two symptoms with the highest sensitivity in the 2-6 age group, just like in the 0-2 age group.

On the other hand, among the other ASD diagnostic criteria related to social communication and interaction, the lack of joint attention was highly stimulating for 66.1%, unable to play appropriate games with peers was highly stimulating for 65.2%, having problems in peer communication was highly stimulating for 61.7% and age-appropriate speech deficiency was highly stimulating for 57.4%. These symptoms were not as stimulating as the two mentioned earlier.

Among the diagnostic criteria of ASD, resistance to changes was marked as high-level stimulus for 33.1%, insensitivity to pain for 29.5%, and sniffing objects for 14.9%. These symptoms seem to be overlooked in this age group as well as in the 0-2 age group. It has been shown that 84% of hyperlexia cases have ASD.[30] However, only 4.4% of paediatricians see hyperlexia as highly stimulating, while 63.2% see it as a non-stimulating symptom, which can be considered a deficiency.

In conclusion, it can be said that paediatricians attribute a high level of importance to symptoms like unresponsiveness to name and difficulty in following directions in both age groups. However, other diagnostic criteria related to social communication and interaction, criteria defined in the field of restrictive and repetitive patterns of behaviour except for repetitive movements, and other clinical conditions accompanying the clinical presentation don't seem to be adequately recognized as significant indicators.

The present study has several limitations that should be considered when interpreting the results obtained. Cross-sectional design and small sample size may be a limitation. Since our results represent samples from two city centres, the results may not fully represent the perspective of all paediatricians in Türkiye. Additionally, the working conditions of the participants were not

standardized and subspecialists from different fields were grouped together, which could impact the interpretation of the results. Furthermore, the questionnaire we used in this study was created by the authors specifically for this research and its psychometric properties were not tested. Additionally, the questionnaire was not piloted. However, this study still provides valuable insights into paediatricians' knowledge and clinical approaches to the field. The questionnaire is planned to be used in future research after its psychometric validity has been studied. There is a need for nationwide, multicentre prospective studies with larger samples, in which standardized tools will be used.

CONCLUSION

Our study shown that the level of knowledge of paediatricians in the field of ASD is insufficient; although they are aware of the importance of the subject, they cannot find enough time in the outpatient clinic, they don't know enough about the symptoms that are expected to be warning signs in the clinic, and the number of patients referred to the child psychiatry clinic with the suspicion of ASD remains very low. It's thought that increasing the competency of paediatricians in the field by improving the trainings received during the residency and after specialization, in a qualitative and quantitative manner, as well as arranging the working conditions in a way that facilitates patient screening and referral to child psychiatry for formal assessment, will provide important advances in the early diagnosis and treatment of ASD.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of the University of Health Sciences Antalya Training and Research Hospital Clinical Researches Ethics Committee (Date: 12.09.2019, Decision No: 20/16).

Informed Consent: Written informed consent form was obtained from participating in this study.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper and that they have approved the final version.

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